

Type: ♂, Lydart, Monmouth, 1941. At sugar; Sir Beckwith Whitehouse.

Ab. melanostigma, ab. nov.

Thorax paler than usual, the ground colour of the forewing as far out as the sagittate marks, which lie just internal to the subterminal line is very pale ochreous brown; the light transverse lines are lost in the ground colour. The antemedian is represented by three blackish brown dots, the postmedian by a row of blackish dots, and the orbicular by a black dot. The discoidal spot and the dark streak running from it to the postmedian are blackish brown and very conspicuous.

Type: ♂, Brampton, Hants. Bred 1.ix.1925; G. Raynor.

Figured *Proc. South Lond. Ent. and N.H. Soc.*, 1937-1938. Pl. 2, fig. 4.

Catocala nupta, L.

Ab. salmonea, ab. nov.

The red colour of the hindwings is replaced by pale to medium salmon pink.

Type: ♂, New Forest, Hants., vii.1906.

Allotype: ♀, Croydon, Surrey, 6.ix.1915.

(*To be concluded.*)

**A SUGGESTED NOMENCLATURE FOR THE WING-BANDS OF
CERTAIN TRYPETIDAE (DIPTERA).**

**WITH SOME NOTES ON THEIR VARIATION IN BRITISH
SPECIES.**

(With Plate IX.)

By H. W. ANDREWS, F.R.E.S.

As is well known, the majority of the species of this family have the wings either banded or latticed, and a study of the amount of variation occurring in a number of species of the banded section has led me to the conclusion that definite names are preferable to the practice of calling these bands first, second, third, etc. I would therefore suggest the following names which I have found to work well, viz.:—

APICAL—(A in figure) consisting of the darkened area at the wing-tip: reaching normally up to, or a little beyond vein 1, 2 and 3 on the costal margin, and to a little below vein *m* at the apex.

SUB-APICAL—(S-A) next to the apical. Extending normally right across the wing, and nearly always having its lower portion coincident with the outer cross-vein (t-p.).

MEDIAN—(M) starting at the stigma on the costal margin and coinciding with the inner cross-vein (t-a).

BASAL—(B) consisting of the darkened area at the base of the wing. It may extend right across the wing (B1 in fig.) or be deflected along the course of the anal vein (B2 in Fig.) in which case it does not reach the hind margin.

In a few genera there are extra wing-bands which I term:—

SECONDARY APICAL—(A2) running parallel to the inner border of the apical and between this band and the sub-apical.

SECONDARY SUB-APICAL—(S-A2) lying between the sub-apical and median bands, usually in the form of an elongated spot and not extending across the wing.

In this suggested nomenclature the word "band" is used as the most convenient term whether extending right across the wing or not, and it is also used in cases such as *Trypeta ruficauda*, Fab., where the "bands" are reduced to spots.

VARIATION (Specific unless otherwise indicated).

The APICAL BAND is the most constant of the wing-markings. It varies from a very slight contraction of the darkened area, e.g., the genus *Myopites*, where it does not extend below vein *m*, or a considerable deduction which in extreme cases leaves it as a mere rim: again it may include a clear spot or spots, or have a single or double clear longitudinal incision varying in depth: these variations are specially noticeable in *Zonosema alternata*, Flh., and *Spilographa zoe*, Mg.

The SUB-APICAL BAND is also constant, especially in the lower portion coincident with the outer cross-vein. It is not always continuous, e.g. the genus *Myopites*, where the upper portion is not directly in line with the lower, but is situated nearer the apex of the wing. The most frequent variation in the whole wing-banded group lies in the relation between the apical and sub-apical bands at the costal margin. There may be (1) a form in which they are absolutely united; (2) an intermediate form, in which they are very closely approximated but not actually touching, or with a clear spot at the point of junction; (3) a form in which the two bands are obviously separated. All three forms may occur in the same species, e.g. *Chaetostomella onotrophes*, Lw., or *Urophora jaceana*, Her. Sometimes the sub-apical band fails to reach the costal margin: or the upper portion may be altogether missing as in *Xyphosia miliaria*, Schr.; again it may be interrupted in the middle. Another form of variation takes the shape of a backward bend (i.e. towards base) at the lower margin closely approximated to, or actually touching, a forward bend (towards apex) in the median band. This is the normal form in *Acidia cognata*, W., and *Philophylla heraclei*, L., and occurs rarely as a variation in some other species. In *Myopites blotii*, Breb., specimens occur in which the sub-apical band contains a small clear spot.

The MEDIAN BAND is the most variable, its most constant characters being the stigmatic spot and the infuscation of the inner cross-vein (t-a). In extreme forms even one or other of these characters may be absent. It varies from extension right across the wing to interruptions into two or more portions, which portions in their turn may subdivide into spots. It very frequently fades out before reaching the hind margin. As in the case of the sub-apical and apical bands, specimens in the same species may exhibit differing forms of variation in this band.

The BASAL BAND is also very variable; as stated above it may terminate in different ways (B1 and B2). Often it only extends half-way across the wing, and not infrequently is merely vestigial, e.g. *Zonosema alternata*, Flh., or altogether missing, e.g. *Urophora stylata*, Fab.

The SECONDARY APICAL BAND may be continuous, as in *Acidia cognata*, W.; or interrupted, as in *Philophylla heraclei*, L.

The SECONDARY SUB-APICAL BAND is usually in the form of a somewhat elongated spot: it occurs for example in *Myopites*, *Zonosema*, *Acidia*, *Rhacochlaena*, etc.

There is one common species, *Sphenella marginata*, Flh., which is banded in a different manner to any others and to which my suggested nomenclature does not apply. It has an apical band: an abbreviated band I consider to be sub-apical: and a band extending right across the wing including both inner and outer cross-veins, which are very close together in this species. This band is too near the middle of the wing to be termed sub-apical, and starting on the apical side of the stigma cannot strictly be called median, so for descriptive purposes I term it "central." With rare exceptions it contains one or more clear spots, while both apical and sub-apical bands occasionally contain clear spots in addition to one at their junction on the costal margin.

It not infrequently happens that separate forms of variation occur in the same specimen, one on each wing. The occurrence of these asymmetrical specimens combined with the fact that although individual specimens can usually be assigned to one or other form yet in a long series they can be seen to merge into each other, is to my mind an argument against giving varietal names to extreme forms.

In addition to the recognised variation, individual aberrational forms may occur now and again in any species especially in *Myopites frauenfeldi*, Schin., and *Trypeta falcata*, Scop.

Considering the variations, both specific and individual, in wing-banding given above, I personally am of opinion that such variations are merely those to be found in any organism in a state of evolutionary progress, though this by no means lessens their interest as a field of study. Several biological problems suggest themselves. For example, are such variations the result of, or effected by, differences in locality, soil or environment?; or in the case of species that have two or more host-plants, have such different plants any definite effect on the markings or variations thereof of the flies bred from them, in other words are there "biological species"? Again, what differences, if any, have the different kinds of larval habits and nutrition on the imaginal wing-markings?, and why do some species vary so widely in their wing markings and others hardly at all?

These problems need a great deal of comparison of material from widely different localities, and careful breeding experiments before any considered conclusions can be drawn. Only in one case can I give any decided answer and that a negative one. An analysis of Niblett's "Host-Plants of British *Trypetidae*" shows that the different forms of larval life-history, gall making, berry and seed-head feeding, and leaf-mining, have no effect on the types of wing markings in the imagines: e.g., *U. cardui* (gall maker), *G. wiedemanni* (berry feeder), and *A. cognata* (leaf-miner), are all banded-winged. Thistle heads produce the clear winged *T. serratulae*, the banded-winged *C. onotrophes*, and the spotted-winged *T. ruficauda*. As regards a species with differing host plants, there is a recorded instance* (relating though to body colour and not

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wing-markings) where of some 100 specimens of *P. heraclei*, L., bred from larvae found by Mr Audcent mining leaves of Alexanders (*Smyr-nium olusatrum*) and divided between himself, Mr Niblett and myself, over 90% of the specimens bred by each of us were the light body-coloured form *onopordinis*, Fab., and only 10% the dark form *centaureae*, Fab. Mr Niblett had a similar result in a smaller series of the same species bred from hogweed (*Heracleum sphondylium*), but these results need to be checked by many more breeding experiments before drawing definite conclusions.

Finally I have to thank Messrs Audcent, Collin, Hamm, Niblett and Saunt for much helpful criticism, and to Mr T. D. Fuller, who drew for me the diagram.

A STUDY ON THE CIRCULAR MOUNDS OF THE ANT *CATAGLYPHIS BICOLOR*, F. (HYMENOPTERA FORMICIDAE).

By W. PICKLES, F.R.E.S.

Plate VIII.

Forel (1928) mentions that ants which are not afraid of their nests being discovered make dumps of their excavated materials around the nest-mouths. Some of these which are circular and of regular shape he terms "ramparts."

The ant *Cataglyphis bicolor*, F., is one of these species making a "rampart" and as these are so regular in height and circumference, being practically circular, it was decided to make observations on the method employed by this species to attain this regularity.

The nest was on a piece of waste ground near Athens (Greece), but unfortunately after only a comparatively few observations had been made the project had to be abandoned due to circumstances beyond my control and they could not be resumed later due to my return to England.

However, for what they are worth, it was decided to place the data on record as a few points of interest had made themselves manifest.

The method employed to ascertain how the "ramparts" were built was to observe the ants as they emerged from the mouth of the nest, and note the part of the "rampart" to which they went to dump their particles of soil. This was recorded on a card upon which half-inch circles had previously been drawn, the outer circle of which was the same size as the outer rim of the "rampart." This card was orientated to the nest and the places marked on the card to which the ants took the particles of soil on the "rampart." In this way a record was obtained and after a little practice these charts could be done with a reasonable degree of accuracy. Many of these charts were made and a typical one is reproduced in the accompanying figure. This figure represents the points where soil was deposited over an interval of five minutes. The result of a perusal of all these charts was that the ants do not deposit their soil evenly all over the "rampart" but during given periods of time certain regions receive more soil than others, i.e., in the figure the areas A, B, C and D received heavier deposits than the rest of the "rampart." During other intervals of time the areas not